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## MEMORANDUM

SUBJECT: MEETING BETWEEN [REDACTED], PG-  
PENNSYLVANIA ON DECEMBER 1, 1955

PERSONS PRESENT: [REDACTED]

## DISCUSSION:

The crux of the meeting concerned the physical nature of the antenna system. A model of the mounting plate with the antennas for the first five bands (500-2200 Mc) was displayed and discussed. It was concluded that the system was entirely too large for mounting on a PT boat, a conclusion which merely confirmed the results of the previous meeting.

The customer, [REDACTED], stated that he thought it highly probable that the 50 Mc lower limit could be changed to 70 Mc. Then, based upon scale model data which [REDACTED] presented, the following tentative bands were set up:

Band 1	70-170 Mc	(2.43:1)	Dipole
Band 2	170-400	(2.35:1)	Dipole
Band 3	400-1000	(2.5:1)	Helix
Band 4	1000-2200		Helix
Band 5	2200-4500		Helix
Band 6	4500-10,000		Helix or Horn
Band 7	10,000-20,000		Horn
Band 8	20,000-40,000		Horn

✓ by [REDACTED] The major change (50-70 Mc) will be investigated upon his return to Washington and an early answer is expected.

Even though agreement was reached on the changes specified above, there was an understanding that some second order frequency shifting might have to take place in the future and further that the dipole characteristics, particularly beam width, will probably not meet the original contract specifications. As was pointed out by [REDACTED], the beam width of a dipole decreases considerably below 80° when the dipole electrical length exceeds one wavelength. However, no objection was raised to this point.

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The remaining discussion concerned proposed packaging schemes. General agreement was reached on a system which removed the dipoles from the rest of the system and placed them on a superstructure which supported the other antennas. The helixes, it was decided, could be stacked vertically with the horns a smaller, separate package above. The upper bands, 3 to 8, could be covered with a fiberglass radome, whose shape might be conical with a hemispherical top. The overall physical size remains to be determined but will be based upon space requirements of the other system components (filters, pre amps, etc.) and antenna reflection considerations. Although interaction between helixes does not seem to present a serious problem, based upon a three helix stack which had been quickly tested prior to the meeting, there may be reflections due to the final mounting configuration which can only be estimated at this time.

In conclusion, packaging was left somewhat nebulous with the feeling that the frequency shift should be approved before serious packaging consideration is given.

25X1

MN:csk

Errata:  indicated upon reading the minutes of the November 28 meeting that the ~~Xtal~~ type for Band 6 (2200-4500) should be a IN23C instead of a IN21C.

25X1

CC: 

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